REMARKS

Claims 1-13 are pending. By this Amendment, Applicants amend claim 2 to correct a minor informality. Applicants respectfully request reconsideration and prompt allowance e of claims 1-13 at leas tin light of the following remarks

Applicants respectfully submit that entry of the amendment to claim 2 is proper under 37 CFR §1.116 because the amendment: (a) merely corrects a minor informality; (b) does not raise any new issue requiring further search and/or consideration; (c) does not present any additional claims without canceling a corresponding number of finally rejected claims; and (d) places the application in better form for appeal, should an appeal be necessary. Entry of the amendment to claim 2 is thus respectfully requested.

Applicants appreciate the courtesies shown to Applicants' representative by Examiner Thompson in the April 21 personal interview. Applicants incorporate a separate record of the substance of the interview into the following remarks.

The Office Action rejects claims 1, 10, and 13 under 35 U.S.C. §103(a) over U.S. Patent 5,796,865 to Aoyama et al. (hereinafter "Aoyama") in view of U.S. Patent 5,721,626 to Kimura et al. (hereinafter "Kimura"). Applicants respectfully traverse the rejection.

In order to establish a prima facie case of obviousness, three criteria must be met (MPEP §§ 2142, 2143). 1) There must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to the skilled artisan, to modify the reference or combine reference teachings. 2) There must be a reasonable expectation of success. 3) The prior art reference (or references when combined) must teach or suggest all of the claim limitations. The first two criteria must both be found in the prior art, and not based on Applicant's disclosure.

Applicant respectfully submits that the Office Action fails to satisfy the first and third criteria. Applicants will address the third criteria and then the first criteria below.

With respect to the third criteria, the Office Action alleges that Kimura generally teaches incrementally increasing the gain of an image signal. Applicants respectfully disagree.

As discussed during the personal interview, Kimura recognizes that the output signal from the CCD line sensor 1 continuously varies with respect to accumulation time (col. 3, line 6-9). The output signal continuously varies because the output signal strength is based on the amount of light reflected by document 20 into CCD line sensor 1 (col. 2, lines 9-20). Kimura identifies that a continuously variable gain requires a large amount of system resources to process and thus increases costs (col. 3, lines 8-11). Accordingly, the method disclosed in Kimura proposes to set gains amount at several predetermined levels in increments of 20-30% (id). Thus, when the CCD line sensor 1 in Kimura detects an amount of light reflected from the document 20, the gain circuit 15, assigns the signal output from the CCD line sensor 1 one of the predetermined gain levels. The disclosed method in Kimura then uses a look-up table (LUT) to approximate the actual gain associated with the assigned predetermined gain level (col. 3, lines 17-26).

Importantly, the method disclosed in Kimura merely teaches setting predetermined levels of gain, each level of gain separated by an increment of 20-30%. When the CCD line sensor 1 detects an amount of light reflected from the document 20, the gain circuit 15 assigns the signal output from the CCD line sensor 1 the predetermined level of gain closest to its actual level of gain. The signal is simply assigned the closest predetermined gain level, and the signal is not incrementally increased through one or more predetermined gain levels to an assigned predetermined gain level. Thus, the signal output from the CCD line sensor 1 is not incrementally increased. Accordingly, Kimura cannot reasonably be considered to teach "incrementally increasing the gain of an image signal," as alleged by the Office Action on page 7.

With respect to the first criteria, assuming Kimura did teach incrementally increasing the gain of an image signal (which Applicant traverses), the Office Action fails to allege a plausible motivation for modifying the method and apparatus of Aoyama based on the teaching. The Office Action alleges that the motivation for modifying the method and apparatus disclosed in Aoyama by the general teaching of Kimura "would have been to lower costs by having a plurality of pre-set gains that can be utilized" (page 7 of Office Action). Applicants respectfully disagree.

As discussed above, Kimura proposes to set the gain amount at several predetermined levels of increments because of the costs associated with continuously varying the gain of the output signal (col. 3, lines 6-10). Further as discussed above, the gain of the signal is continuously varied because the output signal strength is based on the amount of light reflected by document 20 into CCD line sensor 1 (col. 2, lines 9-20). Because the output signal varies based on the amount of light reflected by document 20 into CCD line sensor 1, there is no way for the device of Kimura to know what the strength, and thus the gain, of the next signal output by the CCD line sensor 1 will be. If it did know what the next gain level would be the device could simply adjust the gain directly to that value and the use of predetermined gain values would be unnecessary.

As discussed during the personal interview, in Aoyama, during the primary step of increasing a correction coefficient (alleged to be the desired gradation curve K5 by the Office Action), the method and apparatus of Aoyama enlarges the fundamental gradation curve K1 to a known value. Specifically, the fundamental gradation curve K1 is increased to a desired dmax and desired dmin, which have been designated from input means 29 (col. 9, lines 46 - 57). Accordingly, the method and apparatus of Aoyama may simply increase the curve K1 directly to the known dmax and dmin values to obtain enlarged fundamental gradation curve

K2. Such is the case for each adjustment of the fundamental gradation curve K1, K2, K3, K4, K5 (see, e.g., col. 9, line 58 - col. 10, line 46)

If, as suggested by the Office Action, the method and apparatus of Aoyama were modified to incrementally increase the fundamental gradation curve K1 until it reached the desired dmax and dmin, the modification would actually increase the number of steps necessary to obtain the enlarged fundamental gradation curve K2 and thus the desired gradation curve K5. Each incremental increase would require a separate step. Compared to simply increasing the curve directly to dmax and dmin, the increased number of steps would in fact increase the processing required and thus increase the cost of the method and apparatus disclosed in Aoyama. This is directly contrary to the Office Action's alleged motivation for modifying the method and apparatus disclosed in Aoyama by the general teaching of Kimura. Accordingly, lowering cost by having a preset number of gains that could be utilized cannot reasonably be considered a motivation for modifying the method and apparatus disclosed in Aoyama by the general teaching of Kimura.

Additionally, if, as suggested by the Office Action, the method and apparatus of Aoyama were modified to incrementally increase the fundamental gradation curve K1 until it reached the desired dmax and dmin, the method and apparatus of Aoyama would be unable to reach the actual values of dmax and dmin designated from the input means, but would only be able to increase the fundamental gradation curve K1 to the increment closet to dmax and dmin. Accordingly, the accuracy of the method and apparatus of Aoyama would be substantially reduced. Applicants respectfully submit that such a modification would render the method and apparatus of Aoyama unsatisfactory for its intended purpose in violation MPEP §2143.01, since the explicitly disclosed "primary object" of the method and apparatus of Aoyama is to accurately obtain a desired gradation curve, "wherein [dmax] and [dmin] are capable of being set appropriately," i.e., accurately (col. 3, lines 9-15).

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In light of at least the foregoing, Applicants respectfully submit that the Office Action fails to satisfy the first and third criteria necessary to establish a prima facie case of obviousness under 35 U.S.C. §103(a). Accordingly, Applicants respectfully request withdrawal of the rejection.

The Office Action rejects claims 2-8, 11, and 12 under 35 U.S.C. §103(a) over Aoyama and Kimura in view of U.S. Patent 5,652,412 to Lazzouni et al. (hereinafter "Lazzouni"). Applicants respectfully traverse the rejection.

This rejection is premised upon the presumption that Aoyama and Kimura are properly combined to teach or suggest all of the features of claims 1, and 10, and at least the incrementally increasing feature of claim 5. Because, as discussed above, the combination of Aoyama and Kimura does not teach or suggest the features of claims 1, 10, and a least the incrementally increasing feature of claim 5, the rejection is improper. Applicants respectfully request withdrawal of the rejection.

However, with respect to claim 5-8, as discussed during the personal interview, Applicants separately traverse the rejection. The Office Action recognizes that Lazzouni discloses a whiteboard 14 on which an image 12 is drawn. The Office Action alleges that at the time of the invention, it would have been obvious to the skilled artisan to use the writing instrument of Lazzouni, which inputs on the encoded writing medium, as the input device instead of the input device disclosed in Aoyama. Applicants respectfully disagree.

As correctly pointed out by the Office Action, Lazzouni discloses a writing instrument 10 which writes on a white board 14. However, the sheet of stimulable phosphors disclosed in Aoyama and alleged by the Office Action to disclose an optical sensor (page 5 of Office Action), is only disclosed as capable of sensing radiation (col. 8, lines 28-36). Thus, the sheet of stimulable phosphors disclosed in Aoyama would be incapable of detecting any image 12 written on the whiteboard 14 by writing instrument 10. Accordingly, the modification of

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Aoyama and Kimura by the teaching of Lazzouni proposed by the Office Action would render

the resultant device inoperable, and at least unsatisfactory for its intended purpose, in

violation of in violation MPEP §2143.01.

The Office Action rejects claim 9 under 35 U.S.C. §103(a) over Aoyama, Kimura, and

Lazzouni in view of U.S. Patent 5,479,585 to Komagine et al. (hereinafter "Komagine").

Applicants respectfully traverse the rejection.

This rejection is premised upon the presumption that Aoyama, Kimura, and Lazzouni

disclose all of the features of claim 5. Because, as discussed above, Aoyama, Kimura, and

Lazzouni do not disclose all of the features of claim 5, the rejection is improper. Applicants

respectfully request withdrawal of the rejection.

In view of at least the foregoing, Applicants respectfully submit that this application is

in condition for allowance. Applicants earnestly solicit favorable reconsideration and prompt

allowance of claims 1-13.

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Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, Applicants invite the Examiner to contact the undersigned at the telephone number set forth below.

Respectfully submitted,
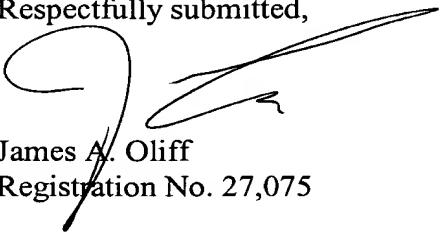
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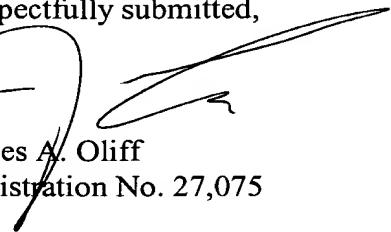
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JAO:JOC/tea

Date: April 22, 2005

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